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[Document Name] Description

[Title of the Invention] FRAGRANCE COMPOSITION

[Claims]

1. A fragrance composition to be added to a hair cosmetic  
 5 composition having a pH of 1 to 5, comprising the following  
 ingredients (A) and (B), or (A) and (C), or (A), (B) and (C):

(A) from 0.1 to 70 wt.% of a musk;

(B) from 0.001 to 80 wt.% of at least one compound selected  
 from the following compounds (i) to (v):

10 (i) compounds represented by the following  
 formula (1):



wherein  $R^1$  represents a linear, branched or cyclic hydrocarbon  
 group having from 2 to 14 carbon atoms, which may contain an  
 15 oxygen atom or nitrogen atom in at least one carbon-to-carbon  
 bond thereof, and  $R^2$  represents a linear, branched or cyclic  
 hydrocarbon group having from 1 to 15 carbon atoms, which may  
 contain an oxygen atom or nitrogen atom in at least one  
 carbon-to-carbon bond thereof,

20 (ii) compounds represented by the following formula  
 (2):



wherein  $R^3$  represents a hydrogen atom or methyl group, and  
 $R^4$  represents a hydrocarbon group or cyclic hydrocarbon group,  
 25 in which an  $\alpha$ -carbon or  $\beta$ -carbon to an ether linkage in an

ester group in formula (2) has a branched chain,

(iii) lactones having total carbon numbers of from 5 to 14,

(iv) ketone compounds having a cyclic or chain skeleton and having total carbon numbers of from 5 to 14,

(v) aldehydes having total carbon numbers of from 5 to 14; and

(C) from 0.01 to 90 wt.% of a hydrocarbon having a total carbon number of from 5 to 15.

2. The fragrance composition according to claim 1, further comprising, as ingredient (D), from 0.00001 to 1 wt.% of a sulfur-containing compound.

3. A hair cosmetic composition having a pH of 1 to 5, comprising a fragrance composition according to claim 1 or 2.

#### **[Detailed Description of the Invention]**

[0001]

#### **[Field of the Invention]**

This invention relates to fragrance compositions which exhibit a high masking effect on acid smell and retain good long-term stability at high temperatures.

[0002]

#### **[Background of the Invention and Problems to be solved by the Invention]**

Conventional hair cosmetic compositions generally have

a pH in the neutral range and contain little acid therein,  
so no problem has been manifested about an acid smell from  
a cosmetic base. Further, no attention has been paid to  
fragrances added to hair cosmetic preparations or their  
5 stability in the acidic range.

[0003]

With the consumers' needs changing in recent years,  
developments have been made to formulate hair cosmetic  
compositions having a pH in the acidic range such that various  
10 functions can be imparted to them. Acidic hair cosmetic  
compositions, however, give off a peculiar acid smell. A need  
has, therefore, arisen to mask a smell of a cosmetic base  
contained in acidic hair cosmetic compositions.

[0004]

15 Acidic hair cosmetic compositions are low in pH. When  
fragrances added to conventional hair cosmetic compositions  
are simply added to such acidic hair cosmetic compositions,  
they develop such a problem that an odor balance deteriorates  
and an unpleasant odor manifests.

20 [0005]

**[Means for Solving the Problem]**

The present inventors, therefore, have proceeded with  
various investigations. As a result, it has been found that  
a combination of a musk with one or more ingredients of specific  
25 chemical structures in particular proportions makes it

possible to obtain a fragrance composition which can mask a smell peculiar to an acidic hair cosmetic composition and is also excellent in long-term stability.

[0006] to [0010]

5 Described specifically, the present invention provides a fragrance composition to be added to a hair cosmetic composition having a pH of 1 to 5, comprising the following ingredients (A) and (B), or (A) and (C), or (A), (B) and (C):

(A) from 0.1 to 70 wt.% of a musk;

10 (B) from 0.001 to 80 wt.% of at least one compound selected from the following compounds (i) to (v):

(i) compounds represented by the following formula (1):



15 wherein  $R^1$  represents a linear, branched or cyclic hydrocarbon group having from 2 to 14 carbon atoms, which may contain an oxygen atom or nitrogen atom in at least one carbon-to-carbon bond thereof, and  $R^2$  represents a linear, branched or cyclic hydrocarbon group having from 1 to 15 carbon atoms, which may  
20 contain an oxygen atom or nitrogen atom in at least one carbon-to-carbon bond thereof,

(ii) compounds represented by the following formula (2):



25 wherein  $R^3$  represents a hydrogen atom or methyl group, and

$R^4$  represents a hydrocarbon group or cyclic hydrocarbon group, in which an  $\alpha$ -carbon or  $\beta$ -carbon to an ether linkage in an ester group in formula (2) has a branched chain,

(iii) lactones having total carbon numbers of from 5 to 14,

(iv) ketone compounds having a cyclic or chain skeleton and having total carbon numbers of from 5 to 14,

(v) aldehydes having total carbon numbers of from 5 to 14; and

(C) from 0.01 to 90 wt.% of a hydrocarbon having a total carbon number of from 5 to 15.

Further, the present invention also provides a hair cosmetic composition having a pH of 1 to 5, comprising the above-described fragrance composition.

[0011]

#### **[Modes for Carrying out the Invention]**

As the musk employed as ingredient (A) in the fragrance composition according to the present invention, a synthetic musk can be mentioned. Specific examples include muscone, civetone, cyclopentadecanone, 5-cyclohexadecen-1-one, cyclopentadecanolide, ambrettolide, 12-ketocyclopentadecanolide, cyclohexadecanolide, 7-cyclohexadecanolide, 12-oxa-16-hexadecanolide, 11-oxa-16-hexadecanolide, 10-oxa-16-hexadecanolide, ethylene brassylate, 3-methycyclopentadecenone (muscenone,

NF), cyclopentadenolide (pentalide), ethylenedodecanedioate,  
 musk ketone, 6-acetylhexamethylindan ("PHANTOLID", trade  
 name of PFW Aroma Chemicals B.V.),  
 4-acetyldimethyl-t-butylindan ("CELESTOLIDE", trade name of  
 5 International Flavors & Fragrances Inc.),  
 5-acetyltetramethylisopropylindan ("TRASEOLIDE", trade name  
 of Quest International B.V.), 6-acetylhexatetralin  
 ("TENTAROME", trade name of PFW Aroma Chemicals B.V.),  
 tetramethyl-6-ethyl-7-acetyl-tetrahydronaphthalene  
 10 ("VERSALIDE", trade name of Givaudan-Roure Corporation),  
 formylethyltetramethyltetralin,  
 acetyldimethyltetrahydrobenzindanone ("VITALIDE", trade  
 name of Takasago International Corporation),  
 hexamethylhexahydrocyclopentabenzopyran ("GALAXOLIDE",  
 15 trade name of International Flavors & Fragrances Inc.), and  
 3-methylcyclopentadecene ("MUSCENONE DELTA", Firmenich,  
 Inc.). Among these synthetic musks, preferred examples are  
 muscone, ambrettolide, ethylene brassylate, musk ketone,  
 3-methylcyclopentadecenone (muscenone, NF),  
 20 cyclopentadecenolide (pentalide),  
 hexamethylhexahydrocyclopentabenzopyran ("GALAXOLIDE",  
 trade name of International Flavors & Fragrances Inc.), and  
 3-methylcyclopentadecene ("MUSCENONE DELTA", Firmenich,  
 Inc.).  
 25 [0012]

From the viewpoint of including an amount sufficient to mask an acid smell, ensuring a harmony in fragrance with other materials and imparting mildness to fragrance, the content of the musk is from 0.1 to 70 wt.%, preferably from 1 to 50 wt.%, more preferably from 2 to 40 wt.% of the fragrance composition.

[0013]

Ingredient (B) employed in the present invention consists of one or more compounds selected from the above-described compounds (i) to (v), although a combination of two or more compounds is preferred.

[0014]

In ingredient (B)(i) of formula (1), the groups represented by  $R^1$  and  $R^2$  can each be a linear, branched or cyclic hydrocarbon group, or a group containing a linear, branched or cyclic hydrocarbon group with an oxygen atom or nitrogen atom inserted in at least one carbon-to-carbon bond thereof. It is to be noted that the term "hydrocarbon group" as used herein includes both saturated and unsaturated ones and the term "cyclic hydrocarbon group" as used herein includes saturated, unsaturated and aromatic, cyclic hydrocarbon groups. As the atom inserted in the at least one carbon-to-carbon bond, an oxygen atom or a nitrogen atom can be mentioned, with an oxygen atom being preferred. A preferred form of linkage with an oxygen atom contained therein is an



ether linkage in a linear ether or cyclic ether.  $R^1$  has from 2 to 14 carbon atoms, while  $R^2$  has from 1 to 15 carbon atoms.

[0015]

Preferred examples of  $R^1$  and  $R^2$  include alkyl groups,  
 5 alkenyl groups, cyclic hydrocarbon groups, cyclic  
 hydrocarbyl-alkyl groups, cyclic hydrocarbyl-alkenyl groups,  
 aromatic hydrocarbon groups, aromatic hydrocarbyl-alkyl  
 groups, aromatic hydrocarbyl-alkenyl groups, and monoterpene  
 and other terpene groups.

10 [0016]

Examples of the compound of formula (1) include terpenyl  
 esters, aliphatic esters, and aromatic esters. Illustrative  
 of the terpenyl esters of formula (1) are citronellyl  
 propionate, geranyl propionate, linalyl propionate, terpinyl  
 15 propionate, rhodinyl propionate, neryl propionate, carbinyl  
 propionate, menthyl propionate, bornyl propionate, isobornyl  
 propionate, linalyl butyrate, geranyl butyrate, citronellyl  
 butyrate, rhodinyl butyrate, neryl butyrate, terpenyl  
 butyrate, santalyl butyrate, citronellyl isobutyrate,  
 20 geranyl isobutyrate, linalyl isobutyrate, rhodinyl  
 isobutyrate, neryl isobutyrate, terpinyl isobutyrate,  
 linalyl isovalerate, citronellyl isovalerate, geranyl  
 isovalerate, menthyl isovalerate, terpinyl isovalerate,  
 linalyl hexanoate, citronellyl hexanoate, geranyl hexanoate,  
 25 linalyl octanoate, citronellyl tiglate, geranyl benzoate,

linalyl benzoate, geranyl phenylacetate, citronellyl  
phenylacetate, rhodinyphenylacetate, menthylphenylacetate,  
linalyl cinnamate, citronellyl tiglate, geranyl tiglate,  
methyl geranate, ethyl geranate, methyl cyclogeranate, ethyl  
5 cyclogeranate, and ethylcitronellyl oxalate.

[0017]

Examples of the aliphatic esters of formula (1) include  
ethyl propionate, propyl propionate, allyl propionate, butyl  
propionate, isobutyl propionate, isoamyl propionate, hexyl  
10 propionate, cis-3-hexenyl propionate, trans-2-hexenyl  
propionate, decenyl propionate, tricyclodecenyl propionate,  
methyl butyrate, ethyl butyrate, propyl butyrate, isopropyl  
butyrate, allyl butyrate, butyl butyrate, isobutyl butyrate,  
amyl butyrate, isoamyl butyrate, hexyl butyrate, heptyl  
15 butyrate, cis-3-hexenyl butyrate, trans-2-hexenyl butyrate,  
octyl butyrate, propylene glycol dibutyrate, cyclohexyl  
butyrate, tetrahydrofurfuryl butyrate, methyl isobutyrate,  
ethyl isobutyrate, propyl isobutyrate, isopropyl isobutyrate,  
butyl isobutyrate, isobutyl isobutyrate, isoamyl isobutyrate,  
20 hexyl isobutyrate, cis-3-hexenyl isobutyrate, 2,4-hexadienyl  
isobutyrate, 1,3-dimethyl-3-butenyl isobutyrate, octyl  
isobutyrate, tricyclodecenyl isobutyrate, methyl  
2-methylbutyrate, ethyl 2-methylbutyrate, 2-methylbutyl  
2-methylbutyrate, hexyl 2-methylbutyrate, cis-3-hexenyl  
25 2-methylbutyrate, allyl 2-ethylbutyrate, ethyl

3-hydroxybutyrate, methyl valerate, ethyl valerate, propyl valerate, butyl valerate, isobutyl valerate, amyl valerate, cis-3-hexenyl valerate, methyl isovalerate, ethyl isovalerate, propyl isovalerate, isopropyl isovalerate, allyl isovalerate, butyl isovalerate, isobutyl isovalerate, isoamyl isovalerate, 2-methylbutyl isovalerate, hexyl isovalerate, heptyl isovalerate, ethyl tricyclo[5.2.1.0<sup>2,6</sup>]decan-2-yl carboxylate ("FRUITATE", Kao Corporation), and ethyl 2-cyclohexylpropionate ("POIRENATE", Kao Corporation). Preferred are butyl propionate, ethyl butyrate, propyl butyrate, isopropyl butyrate, butyl butyrate, isobutyl butyrate, amyl butyrate, isoamyl butyrate, cis-3-hexenyl butyrate, ethyl isobutyrate, butyl isobutyrate, isobutyl isobutyrate, ethyl 2-methylbutyrate, 2-methylbutyl 2-methylbutyrate, ethyl valerate, butyl valerate, isobutyl valerate, amyl valerate, ethyl isovalerate, butyl isovalerate, isobutyl isovalerate, isoamyl isovalerate, 2-methylbutyl isovalerate, ethyl tricyclo[5.2.1.0<sup>2,6</sup>]decan-2-yl carboxylate ("FRUITATE", Kao Corporation), and ethyl 2-cyclohexylpropionate ("POIRENATE", Kao Corporation).

[0018]

Examples of the aromatic esters of formula (1) include ethyl benzylacetoacetate, benzyl propionate, styralyl propionate, anisyl propionate, phenylethyl propionate, cinnamyl propionate, phenylpropyl propionate,

dimethylbenzylcarvinyl propionate, phenoxyethyl propionate,  
 propylene glycol dipropionate, ethyl  
 3-hydroxy-3-phenylpropionate, isobutyl furanpropionate,  
 benzyl butyrate, cinnamyl butyrate, phenylethyl butyrate,  
 5 dimethylbenzylcarvinyl butyrate, benzyl isobutyrate,  
 p-cresyl isobutyrate, cinnamyl isobutyrate, phenylethyl  
 isobutyrate, phenoxyethyl isobutyrate, phenylpropyl  
 isobutyrate, styrallyl isobutyrate, dimethylbenzylcarvinyl  
 isobutyrate, dimethylpheylethylcarvinyl isobutyrate,  
 10 decahydro- $\beta$ -naphthyl isobutyrate, benzyl 2-methylbutyrate,  
 phenylethyl 2-methylbutyrate, benzyl valerate, phenylethyl  
 valerate, furfuryl valerate, benzyl isobutyrate, cinnamyl  
 isovalerate, phenylethyl isovalerate, phenylpropyl  
 isovalerate, benzyl hexanoate, benzyl octanoate, phenylethyl  
 15 octanoate, p-cresyl octanoate, phenylethyl nonaoate, benzyl  
 dodecanoate (benzyl laurate), methyl benzoate, ethyl benzoate,  
 propyl benzoate, isopropyl benzoate, allyl benzoate, isobutyl  
 benzoate, isoamyl benzoate, prenyl benzoate, hexyl benzoate,  
 cis-3-hexenyl benzoate, benzyl benzoate, phenylethyl  
 20 benzoate, ethyl o-methoxybenzoate, methyl  
 dihydroxydimethylbenzoate, methyl phenylacetate, ethyl  
 phenylacetate, propyl phenylacetate, isopropyl phenylacetate,  
 butyl phenylacetate, isobutyl phenylacetate, isoamyl  
 phenylacetate, hexyl phenylacetate, cis-3-hexenyl  
 25 phenylacetate, benzyl phenylacetate, phenylethyl

phenylacetate, p-cresyl phenylacetate, eugenyl phenylacetate, isoeugenyl phenylacetate, methyl cinnamate, ethyl cinnamate, propylcinnamate, isopropyl cinnamate, allyl cinnamate, isobutyl cinnamate, isoamyl cinnamate, benzyl cinnamate, cinnamyl cinnamate, phenylethyl cinnamate, dimethyl phthalate, diethyl phthalate, methyl salicylate, ethyl salicylate, butyl salicylate, isobutyl salicylate, amyl salicylate, isoamyl salicylate, allyl salicylate, hexyl salicylate, cis-3-hexenyl salicylate, cyclohexyl salicylate, phenyl salicylate, benzyl salicylate, phenylethyl salicylate, p-cresyl salicylate, allyl phenoxyacetate, ethyl phenylpropionate, benzyl tiglate, phenylethyl tiglate, cinnamyl tiglate, benzyl angelate, phenylethyl angelate, cinnamyl angelate, and phenyl angelate.

Preferred are benzyl isovalerate, cinnamyl isovalerate, phenylethyl isovalerate, ethyl benzoate, propyl benzoate, isopropyl benzoate, allyl benzoate, isobutyl benzoate, isoamyl benzoate, prenyl benzoate, hexyl benzoate, cis-3-hexenyl benzoate, benzyl benzoate, phenylethyl benzoate, methyl cinnamate, ethyl cinnamate, methyl salicylate, ethyl salicylate, amyl salicylate, isoamyl salicylate, hexyl salicylate, and cis-3-hexenyl salicylate.

[0019]

The content of ingredient (B)(i) is from 0.001 to 80 wt.%, preferably from 1 to 80 wt.%, more preferably from 1.5

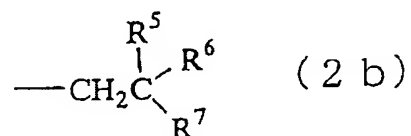
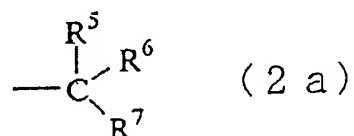
to 60 wt.% of the fragrance composition.

[0020]

In ingredient (B) (ii) of formula (2), the hydrocarbon group or the cyclic hydrocarbon group represented by  $R^4$ , in which an  $\alpha$ -carbon or  $\beta$ -carbon to an ether linkage in an ester group in formula (2) has a branched chain, can be a group represented by the following formula (2a) or (2b):

[0021]

[F 1]



10

[0022]

wherein  $R^5$  represents a hydrogen atom or an alkyl or alkenyl group having from 1 to 14 carbon atoms or forms an unsaturated bond with a carbon atom in  $R^6$  or  $R^7$ ,  $R^6$  and  $R^7$  each represents an alkyl or alkenyl group having 1 to 14 carbon atoms or  $R^5$  and  $R^6$  are fused together to form a saturated or unsaturated, cyclic hydrocarbon group having 4 to 8 carbon atoms, said cyclic hydrocarbon group being optionally substituted by one or more alkyl or alkenyl groups.

20

[0023]

Examples of the compound of formula (2) include terpenyl esters of formic acid and acetic acid, fatty esters of formic acid and acetic acid, and aromatic esters of formic acid and acetic acid. Illustrative of the terpenyl esters of formic acid and acetic acid are linalyl formate, citronellyl formate, geranyl formate, neryl formate, rhodinyll formate, terpinyl formate, cedryl formate, caryophyllene formate, ocimenyl acetate, citronellyl acetate, lavandulyl acetate, isodihydrolavandulyl acetate, nerolidol acetate, geranyl acetate, linalyl acetate, myrcenyl acetate, dihydromyrcenyl acetate, rhodinyll acetate, neryl acetate, tetrahydromugol acetate, ethyllinalyl acetate, carvyl acetate, dihydrocarvyl acetate, dihydrocuminyl acetate, terpinyl acetate, dihydrocarbinyl acetate, isopregol acetate, menthyl acetate, dihydroterpinyl acetate (menthanyl acetate), citryl acetate, myrcenyl acetate, nopyl acetate, penchyl acetate, n-bornyl acetate, isobornyl acetate, guaiyl acetate, cedryl acetate, verbenyl acetate, caryophyllene acetate, santalyl acetate, vetiveryl acetate, and guaiac acetate. Preferred is linalyl acetate.

[0024]

Examples of the aliphatic esters of formic acid and acetic acid include "APHERMATE" (trade name of International Flavors & Fragrances Inc.), oxyoctaline formate, isopropyl acetate, isobutyl acetate, 3-octyl acetate, cyclohexyl

acetate, p-t-butylcyclohexyl acetate,  
 2,4-dimethyl-3-cyclohexenylmethyl acetate,  
 $\alpha$ ,3,3,-trimethylcyclohexanemethyl acetate ("ROSAMUSK",  
 trade name of International Flavors & Fragrances Inc.),  
 5 o-t-butylcyclohexyl acetate, 1-ethylcyclohexyl acetate,  
 tricyclodecenyl acetate,  
 2,4-dimethyl-cyclohexen-1-methanyl acetate ("FLORALATE",  
 trade name of International Flavors & Fragrances Inc.),  
 decahydro- $\beta$ -naphthyl acetate,  
 10 1-acetoxy-2-sec-butyl-1-vinylcyclohexane, tricyclodecyl  
 acetate, tetrahydrofurfuryl acetate,  
 3-pentyltetrahydropyranyl acetate ("JASMAL", trade name of  
 International Flavors & Fragrances Inc.),  
 5-methyl-3-butyltetrahydropyranyl acetate ("JASMELIA",  
 15 trade name of International Flavors & Fragrances Inc.), ethyl  
 acetoacetate, ethyl 2-hexylacetoacetate, methyl  
 cyclopentylidenacetate, allyl cyclohexylacetate, isopropyl  
 cyclohexenylacetate, and o-t-butylcyclohexyl acetate.  
 Preferred are tricyclodecenyl acetate and  
 20 o-t-butylcyclohexyl acetate.  
 [0025]

Examples of the aromatic esters of formic acid and acetic  
 acid include benzyl formate, methylphenylcarbinyl acetate,  
 styralyl acetate, p-methylbenzyl acetate, anisyl acetate,  
 25 piperonyl acetate, acetyl vanillin, rosephenone, hydratropyl



acetate, 2,4-dimethylbenzyl acetate, cuminyl acetate,  
 dimethylbenzylcarbinyl acetate, heliotropyl acetate, eugenol  
 acetate, isoeugenol acetate, phenylglycol diacetate,  
 dimethylphenylcarbinyl acetate,

5 phenylethylmethylethylcarbinyl acetate, veticol acetate,  
 $\alpha$ -amylcinnamyl acetate, decahydro- $\beta$ -naphthyl acetate, and  
 furfuryl acetate.

[0026]

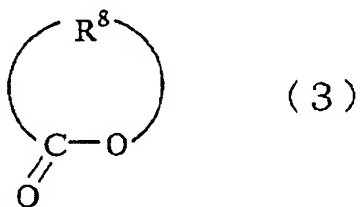
The content of ingredient (B) (ii) is from 0.001 to 80  
 10 wt.%, preferably from 1 to 80 wt.%, more preferably from 1.5  
 to 60 wt.% of the fragrance composition.

[0027]

As ingredient (B) (iii), i.e., the lactones, lactones  
 having total carbon numbers of from 5 to 14, for example,  
 15 compounds represented by the following formula (3):

[0028]

[F 2]



[0029]

20 wherein  $\text{R}^8$  represents a hydrocarbon group having from 4 to  
 13 carbon atoms can be mentioned.

[0030]

In formula (3), the hydrocarbon group represented by  $R^8$  is a linear or branched hydrocarbon group which may contain a cyclic hydrocarbon group at least as a part thereof.

Specifically, linear or branched alkylene groups and  
 5 alkenylene groups can be mentioned, and these alkylene groups and alkenylene groups may each contain one or more aromatic rings.

[0031]

Examples of the compounds of formula (3) include  
 10  $\gamma$ -butyrolactone,  $\gamma$ -valerolactone, angelic lactone,  $\gamma$ -hexalactone,  $\gamma$ -heptalactone,  $\gamma$ -octalactone,  $\gamma$ -nonalactone, 3-methyl-4-octanolide (whisky-lactone),  $\gamma$ -decalactone,  $\gamma$ -undecalactone,  $\gamma$ -dodecalactone,  $\gamma$ -jasmolactone (7-decenolactone),  $\delta$ -hexalactone,  
 15 4,6,6(4,4,6)-trimethyltetrahydropyran-2-one,  $\delta$ -octalactone,  $\delta$ -nonalactone, 2H-1-benzopyran-2-one,  $\delta$ -decalactone,  $\delta$ -2-decenolactone,  $\delta$ -undecalactone,  $\delta$ -dodecalactone,  $\delta$ -tridecalactone,  $\delta$ -tetradecalactone, lactoscatone,  $\epsilon$ -decalactone,  $\epsilon$ -dodecalactone, cyclohexyllactone,  
 20 jasminlactone, cis-jasmonelactone, methyl- $\gamma$ -decalactone, tetrahydro-6-(3-pentenyl)-2H-pyran-2-one, (E)-dec-8-en-5-olide ("JASMOLARITONE", trade name of Firmenich, Inc.), tetrahydro-6-(3-hexenyl)-2H-pyran-2-one, (Z)-undec-8-en-5-olide ("JASMOLACTONE", trade name of  
 25 Bedoukian Research Inc.), menthalactone, and methyl

dihydrojasmonate. Preferred are  $\gamma$ -octalactone,  
 $\gamma$ -nonalactone,  $\gamma$ -decalactone,  $\gamma$ -undecalactone,  
 $\gamma$ -dodecalactone,  $\gamma$ -jasmolactone (7-decenolactone),  
 $\delta$ -octalactone,  $\delta$ -nonalactone, 2H-1-benzopyran-2-one,  
5  $\delta$ -decalactone,  $\delta$ -2-decenolactone, and  $\delta$ -undecalactone.  
[0032]

The content of ingredient (B) (iii) is from 0.001 to 80  
wt.%, preferably from 0.001 to 60 wt.%, more preferably from  
0.002 to 0.40 wt.% of the fragrance composition.  
10 [0033]

As ingredient (B) (iv), i.e., the ketone compounds having  
a cyclic or chain skeleton and having total carbon numbers  
of from 5 to 14, terpenyl ketones, aliphatic linear ketones  
and aliphatic cyclic ketones can be mentioned.  
15 [0034]

Examples of the terpenyl ketones include camphor,  
carvone, dihydrocarvone, pulegone, menthone, piperitenone,  
diosphenol, fenchone, perpenone, geranylacetone,  
farnesylacetone, acetylcedrene (cedryl methyl ketone),  
20 oxocedrane (cedranone, cedrenone), acetylcaryophyllene,  
isolongifolanone (isolongifolane ketone), nootkatone, ionone,  
pseudoionone, methylionone, allylionone, irone, damascone,  
damascenone, isodamascone,  
1-(3,3-dimethyl-6(1)-cyclohexen-1-yl)-pent-4-en-1-one  
25 ("DYNASCONE"), and trimethyl cyclohexenyl butenone

("IRITONE", trade name of International Flavors & Fragrances Inc.). Preferred are ionone, damascone, damascenone, isodamascone, and

1-(3,3-dimethyl-6(1)-cyclohexen-1-yl)-pent-4-en-1-one

5 ("DYNASCONE").

[0035]

Examples of the aliphatic linear ketones include acetoin, diacetyl, methyl amyl ketone, ethyl amyl ketone, 2-pentanone, 3-hexanone, 2-heptanone, 3-heptanone, 4-heptanone, 10 3-octanone, 2-nonanone, 3-nonanone, 2-undecanone, methyl isopropyl ketone, methyl hexyl ketone, methyl nonyl ketone, methylheptenone, ethyl isoamyl ketone, 2-tridecanone, mesityl oxide, butylidene acetone, methyl heptadienone, methyl heptenone, dimethyl octenone, methylene 15 tetramethylheptanone ("KOAVONE", trade name of International Flavors & Fragrances Inc.), 5-hydroxy-4-octanone (butyrolin), 3-hydroxymethyl-2-nonanone, 2,3-pentanedione, 2,3-hexanedione, 3,4-hexanedione, 2,3-heptanedione, acetyl isovaleryl, 2-butyl-1,4-dioxaspiro[4.4]nonane ("JASMONE", 20 trade name of Henkel Corporation), and 2,2,5,5-tetramethyl-4-isopropyl-1,3-dioxane.

[0036]

Examples of the aliphatic cyclic ketones include amylcyclopentanone, amylcyclopentenone, 25 2-cyclopentylcyclopentanone, hexylcyclopentanone,

butylcyclopentanone, maltol, ethyl maltol,  
 2,5-dimethyl-4-hydroxyfrانونe,  
 4,5-dimethyl-3-hydroxy-5H-furan-2-one ("SUGARLACTONE",  
 trade name of Soda Aromatic Co., Ltd.), o-t-butylcyclohexانونe,  
 5 p-t-butylcyclohexانونe, amylcyclopentanone,  
 heptylcyclopentanone, dihydrojasmonone, cis-jasmonone,  
 isojasmonone, trimethylpentylcyclopentanone,  
 3-methyl-5-(2,3,3-trimethyl-3-cyclopentenyl)-3-penten-2-o  
 ne ("SANDEX", trade name of Givaudan-Roure Corporation),  
 10 cycloten, 3,5-dimethyl-1,2-cyclopentadione,  
 3,4-dimethyl-1,2-cyclopentadione, 3,3-dimethylcyclohexyl  
 methyl ketone, 1-acetyl-3,3-dimethyl-1-cyclohexene,  
 2-sec-butylcyclohexانونe,  
 3-methyl-5-propyl-2-cyclohexenone, cryptone,  
 15 p-t-pentylcyclohexانونe,  
 2,3,5-trimethyl-4-cyclohexenyl-1-methyl ketone ("METHYL  
 CYCLOCITRON", trade name of International Flavors & Fragrances  
 Inc.), nerone, 4-cyclohexyl-4-methyl-2-pentanone,  
 cyclohexenyl cyclohexانونe, 2,4-di-t-butylcyclohexانونe  
 20 ("CYCLOWOOD", trade name of Takasago International  
 Corporation),  
 3-methyl-4-(2,4,6-trimethyl-3-cyclohexenyl)-3-buten-2-one  
 ("METHYL IRITONE", trade name of International Flavors &  
 Fragrances Inc.), allylionone,  
 25 2,6,6-trimethyl-2-cyclohexane-1,4-dione,

2-acetyl-3,3-dimethylnorbornane,  
 6-ethylideneoctahydro-5,8-methano-2H-1-benzopyran-2-one  
 ("FLOREX", trade name of International Flavors & Fragrances  
 Inc.), 4-methyltricyclo[6.2.1.0<sup>2.7</sup>]undecan-5-one  
 5 ("PLICATONE", trade name of Firmenich, Inc.),  
 6,7-dihydro-1,1,2,3,3,-pentamethyl-4(5H)-indanone  
 ("CASHMERAN", trade name of International Flavors & Fragrances  
 Inc.), 4(5)-acetyl-7,7,9-trimethylbicyclo[4.3.0]-1-nonene  
 ("ATRINON", trade name of Henkel Corporation),  
 10 acetylisopropylmethylbicyclooctene,  
 4-cyclohexyl-4-methyl-2-pentanone,  
 p-menthen-6-ylpropanone ("NERONE", trade name of  
 Givaudan-Roure Corporation),  
 2,2,5-trimethyl-5-pentylcyclopentanone,  
 15 ethoxyvinyltetramethylcyclohexanone,  
 dihydropentamethylindanone,  
 7-acetyl-1,2,3,4,5,6,7,8-octahydro-1,1,6,7-naphthalene  
 ("ISO E SUPER", trade name of International Flavors &  
 Fragrances Inc.),  
 20 2,6,7-trimethyl-1-acetyl-2,5,9-cyclododecatriene  
 ("TRIMOFIX", trade name of International Flavors & Fragrances  
 Inc.), acetylcedrene [ethanone,  
 1-(2,3,4,7,8,8a-hexahydro-3,6,8,8-tetramethyl-1H-3a,7-met  
 hanoazulen-5-yl)-] $\beta$ -methylnaphthyl ketone.

25 Preferred is

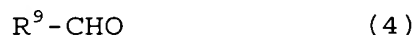
7-acetyl-1,2,3,4,5,6,7,8-octahydro-1,1,6,7-naphthalene  
("ISO E SUPER", trade name of International Flavors &  
Fragrances Inc.).

[0037]

5           The content of ingredient (B)(iv) is from 0.001 to 80  
wt.%, preferably from 0.01 to 50 wt.%, more preferably from  
0.1 to 30 wt.% of the fragrance composition.

[0038]

          As ingredient (B)(v), i.e., the aldehydes, aldehydes  
10       having total carbon numbers of from 5 to 14, for example,  
compounds represented by the following formula (4):



[0040]

          wherein  $\text{R}^9$  represents a hydrocarbon group having from 4 to  
15       13 carbon atoms and optionally containing an oxygen atom or  
nitrogen atom inserted in at least one carbon-carbon bond  
thereof can be mentioned.

[0041]

          The group represented by  $\text{R}^9$  can be a linear, branched  
20       or cyclic hydrocarbon group, or a group containing a linear,  
branched or cyclic hydrocarbon group with an oxygen atom or  
nitrogen atom inserted in at least one carbon-to-carbon bond  
thereof. It is to be noted that the term "hydrocarbon group"  
as used herein includes both saturated and unsaturated ones  
25       and the term "cyclic hydrocarbon group" as used herein includes

saturated, unsaturated and aromatic, cyclic hydrocarbon groups. As the atom inserted in the at least one carbon-to-carbon bond, an oxygen atom or a nitrogen atom can be mentioned, with an oxygen atom being preferred. A preferred  
 5 form of linkage with an oxygen atom contained therein is an ether linkage in a linear ether or cyclic ether.

[0042]

Preferred examples of  $R^9$  include alkyl groups, alkenyl groups, cyclic hydrocarbon groups, cyclic hydrocarbyl-alkyl  
 10 groups, cyclic hydrocarbyl-alkenyl groups, aromatic hydrocarbon groups, aromatic hydrocarbyl-alkyl groups, aromatic hydrocarbyl-alkenyl groups, and monoterpene and other terpene groups.

[0043]

15 Examples of ingredient (B) (v), i.e., the aldehydes include undecenal, heptanal, octanal, undecanal, dodecanal, 2-methylundecanal, citral, geranial, neral, citronellal, 3,7-dimethyloctanal (tetrahydrocitral), hydroxycitronellal, methoxycitronellal,  $\alpha$ -methylenecitronellal ("BENGAMAL",  
 20 tradename of International Flavors & Fragrances Inc.), perilla aldehyde, methoxy dihydrocitronellal, citronellyloxy acetaldehyde, geranyloxy acetaldehyde, mirtenal, caryophyllene aldehyde, 3-ethoxy-4-hydroxybenzaldehyde, and 4-hydroxy-3-methoxybenzaldehyde. Preferred are undecenal,  
 25 heptanal, octanal, undecanal, dodecanal, and



2-methylundecanal.

[0044]

The content of ingredient (B) (v) is from 0.001 to 80 wt.%, preferably from 0.01 to 70 wt.%, more preferably from 0.1 to 50 wt.% of the fragrance composition.

[0045]

These ingredients (B) can be used either singly or in combination. Further, the content of ingredient (B) can preferably be from 0.001 to 80 wt.% of the fragrance composition from the viewpoint of improvements in scent and tastefulness.

[0046]

Ingredient (C), i.e., the hydrocarbon having a total carbon number of from 5 to 15 can be a terpenyl hydrocarbon. Illustrative are  $\alpha$ -pinene,  $\beta$ -pinene, camphene, myrcene, dihydromyrcene, limonene, dipentene, terpinene, terpinolene, carene, allo-ocimene, ocimene,  $\alpha$ -phellandrene, p-cymene,  $\beta$ -caryophyllene,  $\beta$ -farnesene, bisabolene, cedrene, cadinene, valencene, tsujopsene, da-i-ene, and longifolene. Preferred are  $\alpha$ -pinene,  $\beta$ -pinene, and limonene.

[0047]

These ingredients (C) can be used either singly or in combination, although it is preferred to use two or more of them. The content of ingredient (C) in the fragrance composition differs depending upon the kinds and combination of ingredients used, but can be preferably from 0.001 to 90

wt.%, morepreferably from 0.01 to 70 wt.%, evenmorepreferably from 0.1 to 40 wt.% from the standpoint of amount sufficient to mask an acid smell, ensuring a balance with other materials, and achieving improvements in scent and tastefulness.

5 [0048]

From the standpoint of enhancing the scent emitted, making improvements in the refreshing sensation and to give a more defined body for the fragrance, it is preferred to incorporate, in addition to the above-described ingredients, 10 a sulfur-containing compound as an ingredient (D) in the fragrance composition according to the present invention. As the sulfur compounds, an organosulfur compound such as a thiol compound, sulfide compound, disulfide compound, thioaldehyde compound or cyclic thioether compound can be mentioned.

15 Specific examples include propyl mercaptan, isopropyl mercaptan, 2-methyl-3-buthanethiol, allylmercaptan, isoamyl mercaptan, thiogeraniol, limonenethiol, 8-mercaptomenthone (sulfox), phenylmercaptan, o-thiocresol, 2-ethylthiophenol, 2-naphthylmercaptan, furfuryl mercaptan,

20 2-methyl-3-franthiol, dimethyl sulfide, dimethyl disulfide, dimethyl trisulfide, methylpropyl disulfide, methylpropyl trisulfide, propyl disulfide, dipropyl trisulfide, diallyl trisulfide, diallyl disulfide, dibutyl sulfide, methionol, 3-methylthio-1-hexanol, methional, mentho sulfide,

25 dithiospirolactone, furfurylmethyl sulfide,

2-methyl-5-methylthiofuran, methylfuryl disulfide, furfuryl  
disulfide, thiophene, tetrahydrothiophene,  
3-thiophenecarboxaldehyde,  
5-methyl-2-thiophenecarboxaldehyde,  
5 tetrahydrothiophen-3-one, trithioacetone,  
2-methyl-4-propyl-1,3-oxathiane, thioglycolic acid, methyl  
ethylthioacetate, ethyl methylthioacetate,  
2-methylmercaptopropionic acid, pineapple mercaptan, ethyl  
3-methylthiopropionate, ethyl thioacetate, furfuryl  
10 thioacetate, furfuryl thiopropionate, methyl thiobutyrate,  
methylethylmethane thiosulfonate, allyl isothiocyanate, benzyl  
isothianate, thialdine, 2-methyl-4-propyl-1,3-oxathiane,  
p-menthane-8-thiol-3-one, p-mentene-8-thiol, and methyl  
 $\beta$ -methylthiopropionate.

15 [0049]

From the standpoint of the amount sufficient to mask  
an acid smell and ensuring a balance with other materials,  
the content of the sulfur compound in the fragrance composition  
can be preferably from 0.00001 to 1 wt.%, more preferably from  
20 0.0001 to 0.5 wt.%, even more preferably from 0.0002 to 0.4  
wt.%.

[0050]

The fragrance composition according to the present  
invention can also contain  
25 1-(2-t-butylcyclohexyloxy)-2-butanol,

dodecahydro-3a,6,6,9a-tetramethyl-naphtho[2.1-b]furan,  
 2-ethoxynaphthalene, 2-methoxynaphthalene,  
 1H-3a,7-methanoazulene,  
 octahydro-6-methoxy-3,6,8,8-tetramethyl-,  
 5 [3R-(3 $\alpha$ ,3 $\beta$ ,6 $\beta$ ,7 $\beta$ ,8 $\alpha$ )], 2-oxybicyclo[2.2.2]octane,  
 1,3,3-trimethyl, 3,7,-dimethyl-2,6-octadienenitrile,  
 4,4a,5,9b-tetrahydroindeno[1,2d]-1,3-dioxine,  
 tetrahydro-4-methyl-2-(2-methyl-1-propenyl)-2H-pyran,  
 cyclohexanol,  
 10 3-(5,5,6-trimethylbicyclo[2.2.1]hept-2-yl)-cyclohexanol,  
 2-tridecenitrile, 2-methoxy-4-allylphenol,  
 3-methyl-5-phenyl-1-pentanol,  
 1-(2-t-butylcyclohexyloxy)-2-butanol, and/or  
 2-methyl-4-(2,2,3-trimethyl-3-cyclopentene-1-yl)-2-buten-  
 15 1-ol. From the viewpoint of imparting distinctiveness to the  
 fragrance, the content of such an additional fragrant material  
 may preferably be from 0.001 to 50 wt.% of the fragrance  
 composition.

In addition, the fragrance composition according to the  
 20 present invention can also contain one or more of alcohols,  
 polyhydric alcohols and ethers.

[0051]

According to the present invention, a hair cosmetic  
 composition can be formulated with the above-described  
 25 fragrance composition contained therein. As the fragrance

composition according to the present invention is excellent in long-term stability under high-temperature conditions and can mask a smell peculiar to an acidic hair cosmetic composition, it is useful as a fragrance composition for acidic hair cosmetic compositions, especially hair cosmetic compositions whose pHs are preferably from 1 to 5, more preferably from 2 to 4 (even more preferably, from 3 to 4). The hair cosmetic compositions of pH 1 to 5 according to the present invention can include hair cleansing compositions, rinses, treatments, conditioning agents, hair packs, hair creams, styling hair care products, hair tonics, hair restorers, hair colognes and the like, each of which has a pH of from 1 to 5, but excludes hair manicures, hair dyes, and permanent wave solutions. Among these, those used by washing them off, such as hair cleansing compositions, e.g., shampoos and conditioning shampoos, and hair rinses are preferred. It is to be noted that the term "hair cosmetic composition having a pH of 1 to 5" (25°C) as used herein means a hair cosmetic composition whose pH is from 1 to 5 when the undiluted hair cosmetic composition is diluted 20-fold with water.

[0052]

A hair cosmetic composition having a pH of 1 to 5 can be prepared with a similar formula as an ordinary hair cosmetic composition except that its pH is controlled from 1 to 5. Accordingly, an oil ingredient, a conditioning agent, a

humectant, a viscosity increasing agent, a viscosity  
controlling agent, an emulsifier, a colorant, a stabilizer,  
an ultraviolet absorber, a preservative, a pH adjuster and  
the like are added as needed in addition to one or more  
5 surfactants as a cleansing ingredient. As the surfactants,  
anionic surfactants, nonionic surfactants, and amphoteric  
surfactants can be mentioned. Examples of the anionic  
surfactants include polyoxyethylene alkyl ether sulfates,  
polyoxyethylene alkenyl ether sulfates, alkyl sulfates, and  
10 polyoxyalkylene alkyl phenyl ether sulfates, especially  
sulfate-type anionic surfactants such as polyoxyethylene  
alkyl ether sulfates and alkyl sulfates; and sulfonates and  
carboxylates such as alkyl sulfosuccinate salts,  
polyoxyalkylene alkyl sulfosuccinate salts, higher fatty acid  
15 salts, and alkane sulfonate salts.

[0053]

Examples of the nonionic surfactants include  
polyoxyalkylene sorbitan fatty acid esters, polyoxyalkylene  
sorbitol fatty acid esters, polyoxyalkylene glycerol fatty  
20 acid esters, polyoxyalkylene fatty acid esters,  
polyoxyalkylene alkyl ethers, polyoxyalkylene alkyl phenyl  
ethers, polyoxyalkylene (hydrogenated) castor oils, sucrose  
fatty acid esters, triglycerin alkyl ethers, polyglycerin  
fatty acid esters, fatty acid alkanolamides, and alkyl  
25 glycosides. Among these, preferred are alkyl glycosides,

polyoxyalkylene (C<sub>8</sub>-C<sub>20</sub>) fatty acid esters, polyoxyethylene sorbitan fatty acid esters, polyoxyethylene hydrogenated castor oil, and fatty acid alkanolamides. As the fatty acid alkanolamides, those having from 8 to 18 carbon atoms, especially those containing acyl groups of from 10 to 16 carbon atoms are preferred. As the fatty acid alkanolamides, either monoalkanolamides or dialkanolamides are usable, and those containing a hydroxyalkyl group of from 2 to 3 carbon atoms are preferred. Examples include oleic diethanolamide, palm kernel fatty acid diethanolamide, coconut fatty acid diethanolamide, lauric diethanolamide, polyoxyethylene coconut fatty acid monoethanolamide, coconut fatty acid monoethanolamide, lauric isopropanolamide, and lauric monoethanolamide.

[0054]

As the amphoteric surfactants, betaine-type surfactants can be mentioned. Among these, more preferred are betaine alkyl dimethylaminoacetates and fatty acid amidopropylbetaines, with fatty acid amidopropylbetaines being preferred. As the fatty acid amidopropylbetaines, those having 8 to 18 carbon atoms, especially those containing acyl groups of from 10 to 16 carbon atoms are preferred, with laurylamidopropyl betaine, palm kernel fatty acid amidopropyl betaine and cocamidopropyl betaine being preferred.

[0055]

The surfactant can be contained preferably at from 1 to 50 wt.%, more preferably at from 8 to 30 wt.%, even more preferably at from 10 to 22 wt.% in the hair cosmetic composition.

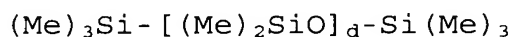
5           As the cationic surfactants, mono(long-chain alkyl) quaternary ammonium salts are preferred. Specific examples include cetyltrimethylammonium chloride, stearyltrimethylammonium chloride, aralkyltrimethylammonium chloride, and  
10       behenyltrimethylammonium chloride, with behenyltrimethylammonium chloride being preferred. Further, the cationic surfactants can also include those formed by adding tertiary amines and the below-described organic salts.  
[0056]

15           As the oil ingredients, higher alcohols, lanolins, liquidparaffin, higher fatty acids, ester oils, and silicones can be mentioned. Examples of the silicones can include the following silicones:  
[0057]

20           (1) Dimethylpolysiloxanes

Those represented by the following formula can be mentioned as examples.

[0058]



25       [0059]



wherein Me represents a methyl group, and d stands for a value of from 3 to 20,000.

[0060]

(2) Amino-modified silicones

5 Preferred examples are those having an average molecular weight of from about 3,000 to 100,000 and described under the name of amodimethicones in the third edition of the CTFA Cosmetic Ingredient Dictionary, U.S.A., although various amino-modified silicones are usable. Preferably, these  
10 amino-modified silicones are used as aqueous emulsions. As commercial products, "SM8704C" (product of Dow Corning Toray Silicone Co., Ltd.) and "DC929" (product of Dow Corning Corporation) can be mentioned.

[0061]

15 (3) Other silicones

In addition to the above-described silicones, polyether-modified silicones, methylphenylpolysiloxane, fatty-acid-modified silicones, alcohol-modified silicones, alkoxy-modified silicones, epoxy-modified silicones,  
20 fluorine-modified silicones, cyclic silicones, and alkyl-modified silicones can also be mentioned.

[0062]

The oil ingredient can be contained preferably at from 0.05 to 10 wt.%, more preferably at from 0.1 to 5 wt.%, even  
25 more preferably at from 0.3 to 2 wt.% in the hair cosmetic

composition.

[0063]

As the conditioning agent, a cationic polymer is preferred. Examples of the cationic polymer include

5 cationized cellulose derivatives, cationic starch, cationized guar gum derivatives, homopolymers of diallyl(quaternary ammonium) salts, diallyl(quaternary ammonium) salt/acrylamide copolymer, quaternized polyvinylpyrrolidone derivatives, polyglycol-polyamine

10 condensation products, vinylimidazolium trichloride/vinylpyrrolidone copolymer, hydroxyethylcellulose/dimethyldiallylammonium chloride copolymer, vinylpyrrolidone/quaternized dimethylaminoethyl methacrylate copolymer, polyvinylpyrrolidone/alkyl

15 aminoacrylate copolymers, polyvinylpyrrolidone/alkyl aminoacrylate/vinylcaprolactam copolymer, vinylpyrrolidone/methacrylamidopropyl-trimethylammonium chloride copolymer, alkylacrylamide/acrylate/alkylaminoalkyl

20 acrylamide/polyethylene glycol methacrylate copolymers, adipic acid/dimethylaminohydroxypropyl ethylenetriamine copolymer ("CARTARETIN", product of Sandoz, Inc., U.S.A.), and cationic polymers disclosed in JP-A-53-139734 or JP-A-60-36407. Preferred examples are cationized cellulose

25 derivatives and cationized guar gum derivatives.

[0064]

The conditioning agent can be contained preferably at from 0.05 to 5 wt.%, more preferably at from 0.1 to 3 wt.%, even more preferably at from 0.3 to 1 wt.% in the hair cosmetic composition.

[0065]

In the hair cosmetic composition according to the present invention, an organic acid can be additionally incorporated to make improvements in the finish of hair such as sleekness and style. Examples of the organic acid include carboxylic acids such as monocarboxylic acids, dicarboxylic acids, hydroxycarboxylic acids and polycarboxylic acids, and alkylphosphoric acids. Among these, carboxylic acids, especially dicarboxylic acids and hydroxycarboxylic acids are preferred. Examples of the dicarboxylic acids include malonic acid, succinic acid, glutaric acid, adipic acid, maleic acid, fumaric acid, and phthalic acid, and illustrative of the hydroxycarboxylic acids are glycolic acid, lactic acid, hydroxyacrylic acid, oxybutyric acid, glyceric acid, malic acid, tartaric acid, and citric acid. Among these,  $\alpha$ -hydroxycarboxylic acids, especially lactic acid and malic acid are preferred.

[0066]

Two or more of these organic acids can be used in combination. Further, the content of the organic acid can

be preferably from 0.05 to 10 wt.%, more preferably from 0.1 to 5 wt.%, even more preferably from 0.5 to 1 wt.% of the hair cosmetic composition according to the present invention.

[0067]

5            In the hair cosmetic composition according to the present invention, an aromatic alcohol may be additionally incorporated to make improvements in touch feel and post-shampoo sleekness. Examples of the aromatic alcohol include benzyl alcohol, benzyloxyethanol and phenoxyethanol, 10 with benzyl alcohol and benzyloxyethanol being preferred.

[0068]

Two or more of these aromatic alcohols can be used in combination. Further, the content of the aromatic alcohol can be preferably from 0.01 to 20 wt.%, more preferably from 15 0.1 to 10 wt.%, even more preferably from 0.5 to 5 wt.% of the hair cosmetic composition according to the present invention.

[0069]

The hair cosmetic composition having a pH of 1 to 5 20 according to the present invention can be produced in a similar manner as conventional hair cosmetic compositions except that its pH is controlled from 1 to 5.

[0070]

**[Examples]**

25    Example 1

An unfragranced conditioning shampoo (pH 3.7) of the formula shown in Table 1 was prepared. Aliquots of the unfragranced conditioning shampoo were fragranced with 0.5 wt.% of the fragrance compositions 1 to 12 shown in Table 2 and Table 3, respectively, to formulate conditioning shampoos. Samples of the conditioning shampoos were weighed as much as 20 g each in standard 50-mL wide-mouth bottles "PS-06" (made of clear glass), and were placed in a storage cabinet controlled at 50°C. One month later, a scent given off from the surface of each shampoo was ranked by two expert panelists in accordance with the below-described ranking standard, and the average of their ranking scores was recorded. The ranking was an overall ranking on a masking effect for an acid smell, stability and the like while taking into consideration the spreading characteristics, the floating pattern and the like of the fragrance.

Ranking standard:

- 5: Excellent
- 4: Good
- 3: Satisfactory as a commercial product
- 2: Slightly poor
- 1: Poor

[0071]

Table 1

Conditioning shampoo composition (pH 3.7)

		(wt.%)
	Sodium POE(2) lauryl ether sulfate	11.0
	Sodium lauryl sulfate	5.0
	Cationized guar gum	0.3
5	Malic acid	0.75
	Lactic acid	0.1
	Sodium chloride	0.2
	Benzyl alcohol	0.5
	Cocoyl monoethanolamide	1.0
10	Dimethicone (viscosity: 100,000 cps)	0.5
	Amodimethicone	0.1
	Myristyl alcohol	1.0
	Cetanol	0.5
	Ethylene glycol distearate	3.0
15	Cationized hydroxyethylcellulose	0.3
	Glycerol	1.0
	Sodium hydroxide	q.s. to pH 3.7
	Deionized water	Balance

[0072]

Table 2

Types	Ingredient names	Fragrance compositions						
		1	2	3	4	5	6	7
A:MUSK	Musk ketone	0	3	3	3	3	3	3
A:MUSK	"GALAXOLIDE"	0	93	93	93	93	93	93
B-i:ESTER	Cis-3-hexenyl salicylate	0	0	15	0	0	15	15
B-i:ESTER	Ethyl 2-methylbutyrate (DPG 10%)	0	0	5	0	0	5	5
B-i:ESTER	"FRUITATE" (ethyl tricyclodecanylcarboxylate)	0	0	5	0	0	5	5
B-i:ESTER	Tricyclodecenyl propionate	0	0	20	0	0	20	20
B-i:ESTER	Methyl salicylate (DPG 10%)	0	0	5	0	0	5	5
B-ii:ESTER	o-t-Butyl cyclohexylacetate	0	0	15	0	0	15	15
B-iii:KETONE	"ADMASCENONE"	0	0	0	0.5	0	0	0.5
B-iii:KETONE	" $\alpha$ -DAMASCONE"	0	0	0	1.5	0	0	1.5
B-iii:KETONE	$\beta$ -Ionone	0	0	0	20	0	0	20
B-iii:KETONE	Methylionone-G	0	0	0	25	0	0	25
C:TERPENE	Limonene	0	0	0	0	25	25	25
SOLVENT	Dipropylene glycol	350	244	191	207	229	164	117
	FORMULA* <sup>note 1</sup>	650	650	650	650	650	650	650
	Total (parts by weight)	1000	1000	1000	1000	1000	1000	1000

FORMULA\*<sup>note 1</sup> Fragrance formula formed primarily of alcohols and containing aldehydes, dipropylene glycol, etc.

[0073]

Table 3

Types	Ingredient names	Fragrance compositions						
		8	9	10	11	12		
-	Hexyl acetate	5	0	0	0	0		0
-	Iso-amyl acetate	2	0	0	0	0		0
-	Indole (DPG 10%)	5	0	0	0	0		0
A	Musk ketone	3	0	3	3	3		3
A	"GALAXOLIDE"	185	0	185	185	185		185
B-i	"FRUITATE"	0	0	0	5	5		5
B-i	Tricyclodecenyl propionate	0	0	0	20	20		20
B-i	Methyl salicylate (DPG 10%)	0	0	0	5	5		5
B-i	Cis-3-hexenyl salicylate	0	0	0	15	15		15
B-i	Ethyl 2-methylbutyrate (DPG 10%)	0	0	0	5	5		5
B-ii	o-t-Butyl cyclohexylacetate	0	0	0	15	15		15
B-iii	G-Decanolactone	0	20	0	20	20		20
B-iv	"DAMASCENONE"	0.5	0	0	0.5	0.5		0.5
B-iv	"d-DAMASCONE"	1.5	0	0	1.5	1.5		1.5
B-iv	$\beta$ -Ionon	20	0	0	20	20		20
B-iv	Methylionon-G	25	0	0	25	25		25
B-v	$\alpha$ -Methyl-1,3-benzodioxol-5-propanal	0	0	10	10	10		10
B-v	Decanal (DPG 10%)	0	0	2	2	2		2
B-v	Dodecanal (DPG 10%)	0	0	1	1	1		1
B-v	Hexylcinnamic aldehyde	0	0	90	90	90		90
B-v	$\alpha$ -Methyl-4-(1-methylethyl)-benzenepropanal	0	0	15	15	15		15
B-v	p-t-Butyl- $\alpha$ -methylhydrocinnamic aldehyde	0	0	140	140	140		140
C	Limonene	25	0	0	25	25		25
D	p-Menthane-8-thiol-3-one (1% DPG)	0	0	0	0	0		0
Ether	Dodecahydro-3a,6,6,9a-tetramethyl-naphtho[2.1-b]furan	0	0	0	0	0		0
	FORMULA* <sup>note 2</sup>	340	340	340	340	340		340
Solvent	Dipropylene glycol	388	640	402	57	55.7		55.7
	Total (parts by weight)	1000	1000	1000	1000	1000		1000

FORMULA\*<sup>note 2</sup> Fragrance formula formed primarily of alcohols and containing solvents such as dipropylene glycol, etc.



[0074] The results are shown in Table 4. The mark "%" cited in the table means a weight percent.

[0075]

Table 4

Results of Ranking in Stability and Masking Effect

	Comp. Exs.		Examples						Comp. Exs.			Examples		
	1	2	1	2	3	4	5	3	4	6	7	8		
Composition of Table 1	99.50%	99.50%	99.50%	99.50%	99.50%	99.50%	99.50%	99.50%	99.50%	99.50%	99.50%	99.50%		
Fragrance composition 1	0.50%													
Fragrance composition 2		0.50%												
Fragrance composition 3			0.50%											
Fragrance composition 4				0.50%										
Fragrance composition 5					0.50%									
Fragrance composition 6						0.50%								
Fragrance composition 7							0.50%							
Fragrance composition 8								0.50%						
Fragrance composition 9									0.50%					
Fragrance composition 10										0.50%				
Fragrance composition 11											0.50%			
Fragrance composition 12												0.50%		

changes with time	1	3	3.5	4	3.5	4	5	4	2	4	5	5
	<1	2	3	4	3.5	3.5	4.5	1	2	3.5	4.5	4.5<
Performance (masking performance)	1	3	3.5	4	3.5	4	5	4	2	4	5	5

[0076]

As shown in FIG. 4, the conditioning shampoos formulated by fragrancng the aliquots of the unfragranced conditioning shampoo of Table 1 with the fragrance compositions of Examples 1 to 8 according to the present invention were acknowledged to have clear advantages in changes with time and performance (masking performance) over the conditioning shampoos formulated by fragrancng the aliquots of the unfragranced conditioning shampoo of Table 1 with the fragrance compositions of Comparative Examples 1 to 4 from a comparison therebetween.

In the case of Example 2, for example, the change with time upon elapsed time of 1 month at 50°C were ranked "4" (good) like the change with time one day after the formulation owing to the inclusion of the fragrance composition 4 according to the present invention, thereby demonstrating excellent stability at high temperatures. In the case of Example 5, the change with time upon elapsed time of 1 month at 50°C were ranked "4.5" as compared with "5" one day after the formulation owing to the inclusion of the fragrance composition 7 according to the present invention, thereby also demonstrating excellent stability at high temperatures.

[0077]

Example 2 Clear Shampoo

		(wt.%)
25	Sodium POE(2) lauryl ether sulfate	10.0

	Myristyl alcohol	0.5
	Cationized hydroxyethylcellulose	0.2
	Laurylamidopropyl betaine	0.5
	Cocoyl monoethanolamide	0.3
5	Malic acid	0.75
	Glycerol	1.0
	Deionized water	Balance

A clear shampoo formulated by adding the fragrance composition 7 to the above-described composition (pH 3.7) such that its content became 0.5 wt.% was free of any acid smell, and retained the fragrance over a long time.

[0078]

#### Example 3 Anti-dandruff Shampoo

		(wt.%)
15	Sodium POE(2) lauryl ether sulfate	10.0
	Sodium lauryl sulfate	5.5
	Myristyl alcohol	1.0
	Cetanol	0.5
	Cationized hydroxyethylcellulose	0.3
20	Cationized guar gum	0.3
	Cocoyl monoethanolamide	0.5
	Dimethicone (polymerization degree:2,000)	0.5
	Dimethicone (polymerization degree:200)	0.5
	Malic acid	0.7
25	Benzyloxyethanol	0.5

	Ethylene glycol distearate	3.0
	Cocoyl benzalconium chloride	0.5
	Glycerol	1.0
	Sodium chloride	0.2
5	Deionized water	Balance

A shampoo formulated by adding the fragrance composition 7 to the above-described composition (pH 3.7) such that its content became 0.5 wt.% was free of any acid smell, and retained the fragrance over a long time.

10 [0079]

#### Example 4 Conditioner

		(wt.%)
	Lactic acid	4
	Polypropylene glycol (m.w. 400)	1
15	Behenyltrimethylammonium chloride	1.7
	Stearyltrimethylammonium chloride	
	Behenyl alcohol	5.1
	Methylpolysiloxane ("SH500-5000CS")	3
	Isopropyl palmitate	1
20	Dipentaerythritol fatty acid ester	0.1
	Benzyloxyethanol	0.3
	Hydroxyethylcellulose	0.2
	Polyethylene glycol (m.w. 100,000)	
	48% Sodium hydroxide	0.2
25	Deionized water	Balance

A conditioner formulated by adding the fragrance composition 7 to the above-described composition (pH 3.3) such that its content became 0.5 wt.% was free of any acid smell, and retained the fragrance over a long time.

5 [0080]

Example 5 Hair manicure

		(wt.%)
	Black 401	0.1
	Purple 401	0.05
10	Orange 205	0.1
	Propylene carbonate	16
	Lactic acid	3.5
	Liquefied sodium hydrate	Adjusted to pH 2.9
	Hydroxyethyl cellulose	1.5
15	Purified water	Balance

A hair manicure formulated by adding the fragrance composition 7 to the above-described composition (pH 3.7) such that its content became 0.5 wt.% was free of any acid smell, and retained the fragrance over a long time.

20

#### **[Effect of the Invention]**

The fragrance compositions according to the present invention are excellent in masking effects for a smell peculiar to hair cosmetic compositions having a pH of 1 to 5, and are also superb in long-term stability under high-temperature

25

conditions. Acidic hair cosmetic compositions with the fragrance compositions added therein can each retain a good scent over a long period.

[Document Name] Abstract

[Abstract]

[Means for Solving the Problem]

5 Provided is a fragrance composition to be added to a hair cosmetic composition having a pH of 1 to 5, comprising the following ingredients (A) and (B), or (A) and (C), or (A), (B) and (C):

(A) from 0.1 to 70 wt.% of a musk;

(B) from 0.001 to 80 wt.% of at least one compound selected  
10 from the following compounds (i) to (v):

(i) compounds represented by the following formula (1):



wherein  $R^1$  represents a linear, branched or cyclic hydrocarbon  
15 group having from 2 to 14 carbon atoms, which may contain an oxygen atom or nitrogen atom in at least one carbon-to-carbon bond thereof, and  $R^2$  represents a linear, branched or cyclic hydrocarbon group having from 1 to 15 carbon atoms, which may contain an oxygen atom or nitrogen atom in at least one  
20 carbon-to-carbon bond thereof,

(ii) compounds represented by the following formula  
(2):



wherein  $R^3$  represents a hydrogen atom or methyl group, and  
25  $R^4$  represents a hydrocarbon group or cyclic hydrocarbon group,

in which an  $\alpha$ -carbon or  $\beta$ -carbon to an ether linkage in an ester group in formula (2) has a branched chain,

(iii) ketone compounds having a cyclic or chain skeleton and having total carbon numbers of from 5 to 14, and

5 (C) from 0.01 to 90 wt.% of a hydrocarbon having a total carbon number of from 5 to 15.

**[Effect]**

The fragrance compositions according to the present invention are excellent in masking effects for a smell peculiar  
10 to hair cosmetic compositions having a pH of 1 to 5, and are also superb in long-term stability under high-temperature conditions. Acidic hair cosmetic compositions with the fragrance compositions added therein can each retain a good scent over a long period.

15 **[Selected Drawings]**      None